MISSOURI BOTANICAL GARDEN

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Missouri Botanical Garden Bulletin

Vol. XLVII No. 3 APRIL, 1959

OH HAPPY DAY — HER ORCHID BLOOMED

CLARISSA START

I'VE been attending spring luncheons lately and admiring the table decorations. The Highland (Ill.) Women's Club made place mats and table borders out of these columns, which they'd collected for months, proving that there are things you can do with old newspapers even if you have a garbage disposal. Foreign flags, dolls, books have been used by other clubs. But everywhere forsythia has been forced into bloom.

Now I've never had much luck forcing forsythia but one of the clubwomen told me it was simple. Keep the forsythia in warm water in a dark corner of the basement, the darker the better, until it starts to open. Then bring it out into the light. She doesn't know how to time it so it opens on the right day. Hers opened a week early and she had to start all over.

My experience with our orchid plant was just the reverse, but I was so surprised and delighted to see that orchid bloom, I didn't care when it put on its show.

The orchid joined our plant collection—an undistinguished group of philodendron, mothers-in-law tongues, a few unsprouted begonia tubers and half a dozen will-they-or-won't-they-make-it geraniums—when I became a Friend of the Garden. I had always been a friend of the garden, Missouri Botanical (Shaw's) Garden, that is, but I felt even friendlier when I learned that in return for becoming an official contributing Friend I would receive an orchid plant. [From a limited surplus, now exhausted. *Ed.*]

It was easily the coldest day of winter when I called at the greenhouse to present my coupon. The girl who led me to the gift plants was apologetic. Most of them had been given away and she wasn't sure there was one with a bud.

"Never mind," I said. "I'll consider myself lucky if this lives. I won't expect it to bloom."

Shielding the orchid plant with newspaper (another good use for old ones) I carried it home and read the mimeographed instructions. They did not say you had to have a greenhouse, which I had always assumed, or that they must grow under fluorescent light, as some of the experts are trying. They merely stipulated that you put the orchid in a sunny window, keep the pot on moist gravel for humidity, and water it by soaking once a week.

I scooped some rocks out of the driveway and put them in an old casserole as a base for the flower pot. Once a week I have been placing the flower pot in the bathroom washstand in water to the rim of the pot. Either it absorbs water quickly or we have a

leaky stopper but the water soon disappears.

Two weeks ago I noticed a faint tinge of purple at the edge of what I had assumed was a new leaf. It was a bud about to open. I began to hover over it, coax it, give it the fluorescent light treatment. When it looked as if the flower were just about to unfurl, we called our friends in for an impromptu party to celebrate Hawaii's statehood. We planned on fresh pineapple and orchids for decorations.

But the bud remained tightly, stubbornly sheathed, even in the middle of the party table. The next day, surrounded by crumpled napkins and stacks of dishes, it opened—or rather, they opened, two gorgeous flamboyantly purple orchids. Admired only by the family, they've continued to bloom all week as proudly as if they were in the V. P. Queen's bouquet. It really doesn't matter that the timing was slightly off. I still feel like Luther Burbank.

—Reprinted from the *Post Dispatch*, March 24, 1959

OLD-FASHIONED CANNAS FOR ST. LOUIS

A century ago old-fashioned Cannas or "Indian Shot" were one of the most popular summer plants for St. Louis. They take kindly to sun and heat, to heavy clay soils and city conditions; from June to October they make themselves very much at home here. Fifty years ago, handsome large-flowered varieties became fashionable and the tough tall-growing varieties almost disappeared from the city.

In the last decade they have been making a real comeback; this note is designed to call attention to the ease with which they can be managed and the various ways in which they can be used in the modern garden. If there is any tropical or sub-tropical plant which is easier to grow in St. Louis I do not know of it. The fleshy rhizomes are set out just barely covered with soil as soon as the weather gets really warm. During spells of drought the cannas will do better with frequent waterings but they can go for long periods with no water at all and still show few bad effects. In good soil they shoot up rapidly and by September will be ten feet or more tall; but if one does not want them that height they are easily cut back to whatever size desired and the prunings make attractive flower arrangements either alone or in combination with other material. The flowers are small, of a deep coral red, and quite attractive, particularly when one looks out at them from inside the house. They, too, are most appropriate for modern flower arrangements because of their strange color and interesting form. Unlike the large-flowered varieties the petals are tough and are seldom damaged by wind or sun or insects.

In Victorian times cannas were usually planted in little circular beds set off by themselves. For a modern garden they can be planted in large blocks as part of the design or they can be used most effectively here and there to fill in among other things, to shade more delicate plants, or to grow

in hot dry corners next to a wall where nothing else will survive. Though they prefer sunshine they will put up effectively with a good deal of shade.

The only necessary precaution is to dig the roots before real winter has set in. The rhizomes are not injured even after frost has cut down the foliage but a real freeze will kill them outright. No precautions are necessary in storing them. They can be dug with wet clay soil adhering to them or taken up in a drier autumn with nothing on the roots. In either case they will come through the winter in a warm dry basement with no special treatment of any sort. They can be dumped into a basket any which way and, if they are kept warm and dry, will need no further attention until they are set out.

One of the most interesting places to grow these tall cannas is directly in front of a kitchen window where they may be watched from day to day. After they get up tall enough to be seen from the kitchen the new leaves are beautiful and fascinating to watch. They first show above the leaves below them, like tightly coiled pencils. In hot humid weather they develop so rapidly that one can almost watch them grow. The edges of the leaves and their dark rich shadings as they mature are almost as beautiful as the blossoms themselves. —EDGAR ANDERSON

PLUMBAGO AND IVY

A GOOD COMBINATION FOR LATE SUMMER GARDENS IN ST. LOUIS

A bright blue perennial ground cover known in the trade as *Plumbago Larpentae* has long been recognized as one of the most reliable low perennials for late summer gardens in St. Louis. The proper botanical name for this charming plant is *Ceratostigma plumbaginoides*; but few, indeed, are those gardeners who have any idea what plant you are talking about if you use this set of mouth-filling vocables. If ever a nice little plant deserves a good common name, it does; "Plumbago" does not make a good one since there are tender subtropical plants already widely known by that name.

By a happy accident Ceratostigma was tried in combination with Bulgarian Ivies in the Missouri Botanical Garden and the results are both practical and pleasing. Shortly after the collection of Balkan Ivies was received at the Garden, a spot along the east wall was selected for a critical test of their hardiness to cold and to drought. It was felt that if they would grow there, they would be really practical in St. Louis and they were set out between a bed of Ceratostigma and the high limestone wall.

In the 20 years since this test was started, the ivies have not only climbed the wall; they have overrun the entire flower bed, the grass strip in front of it and now they border directly on the walk itself. The shrubs which used to be in this planting have gradually been removed and the Ceratostigma, with no other encouragement, now grows happily in under the ivy. In the spring the ivy comes rapidly into leaf

and the Ceratostigma is scarcely visible. As summer advances, the ivy slows down its growth and the Ceratostigma pokes through the ivy leaves and grows up above them, bursting into vigorous bloom in mid-summer and continuing in flower for some weeks. Frequently the leaves turn red in late autumn providing an interesting contrast at the very end of the season. The brilliant blue of the Ceratostigma makes a beautiful display above the dark green leaves of the ivy and the combination can be maintained in an attractive condition for very few man hours per year. —EDGAR ANDERSON

EDUCATIONAL PROGRAMS FOR CHILDREN AT THE MISSOURI BOTANICAL GARDEN

KENNETH O. PECK

FOR the first time in the history of the Missouri Botanical Garden, there is an organized series of comprehensive educational programs for children of a wide age range. The sustained response to the various new activities has been gratifying and, in accordance with Henry Shaw's desire to acquaint the general public with the Plant Kingdom, a great number of children have been exposed to botany and horticulture. The following account is a description in some detail as to the kinds of programs offered and the mechanics of each.

TOURS

Guided and self-guided tours are provided, but no tours are regularly scheduled. Guided tours are scheduled by appointment and include general tours of the Garden, the Tree Trail, and a tour entitled, "Introduction to Botany." Teachers or group leaders interested in bringing a group for the Tree Trail are given or sent a guide booklet describing the trail and providing general information about the 40 trees found on it. Each member of a group receives a free Tree Trail Guide Sheet showing leaf outlines and tree silhouettes of trees on the trail in addition to a map of the trail. All trail trees are individually numbered and labeled. Since its inception in September of 1957, the Tree Trail has been walked in whole or in part by an estimated 12,000 to 15,000 children and adults. A group desiring a guide is directed through the first half of the trail; although the trail may be easily followed unguided. The "Introduction to Botany" tour, primarily confined to the conservatories, requires a guide who serves to point out such botanical curiosities as insectivorous plants, epiphytes, orchids, and peculiar plant growth habits.

In addition to the tours guided by Garden Staff members, a great number of tours arranged for special groups of both children and adults are directed through the Garden by a staff of volunteer guides headed by Mrs. Paul H. Britt. These volunteers who have been trained at the Garden and who participate in garden activities, are also available by appointment.

SUMMER NATURE CLASSES

During the summer of 1958, two five week sessions of nature classes were offered in the Pitzman Nature Program at the Garden. The classes covered trees, birds, animals and insect pests, and plants in general. In the "Trailfinders" class, children made leaf prints of 30 to 50 trees and pressed fresh leaves. Some magnificent leaf and leaf-print notebooks were made and entered in competition in the 1958 Fall Harvest Show. The class in "Birds" was instructed by members of the St. Louis Audubon Society. It covered habits of migration nesting, and feeding, and offered bird walks and films. In "Man's Enemies," the children looked at animal and insect pests. They made their own insect collecting nets from coat hangers and cheesecloth and mounted their insects in cigar boxes. "Plants and Man" was a course which attempted to introduce children to the Plant Kingdom through the study of flower structure, seed dispersal, plant anatomy, methods of propagating plants from seeds and cuttings, and the life cycles of mosses and ferns.

These summer classes met twice a week and were attended by close to 300 children. Nature films were shown in the event of inclement weather; but classes were otherwise held out-of-doors. The classes were instructed by three Garden Staff members. Each child was required to register for the course or courses in which he was interested. Certificates were awarded to children who attended at lease 60% of the meetings of any one class.

SATURDAY ACTIVITIES

The most recent program for children is the series of Saturday morning classes. The instructors are Josephine Davies, and the writer. Insofar as it is possible, the individual morning activities are planned so that one activity is not a prerequisite for another. This enables anyone attending for the first time to fit into the schedule of a single morning's activity. Some unavoidable instances of where this is not entirely possible is in the case of a class covering propagation of plants from cuttings or sowing seeds for a garden —each an activity requiring a child to return to pot rooted cuttings or transplant seedlings.

The schedule of activities is printed on 4×5 cards which are available through the garden. Each activity is attractively, and some intriguingly, titled. Such activities as tours, propagation of plants from cuttings and seeds, making Christmas wreaths and miniature gardens, and hearing demonstrated lectures in botany and horticulture have attracted many children. Nature films are shown every six weeks and, as far as possible, pertain to a particular morning's activity. The average Saturday morning's attendance has been 70 children. As many as 15 first-comers have attended on a single morning, and since the first class on December 13, 1958, more than 250 children have attended the classes. There is no registration but attendance records are kept on each person for the purpose of issuing certificates.

There is no charge for any of the programs described above and no limit

is placed on the number of children who may attend. Two age groups, 7 to 10, and 11 to 18, are designated for all programs except tours. Attendance is kept by making a name tag for each person attending an activity. The tags are punched and hung on a pegged board. When a child comes for a class, he removes his name tag from the board and turns it in to the instructor.

The emphasis in most classes is placed on plants and all plant material is provided by the Garden. For classes in which something technical, such as seed structure or fern and moss life cycles, is studied, an illustrated, one-page, mimeographed information sheet is given to each child. Since very little is required of these children with respect to learning something, they are told that they need not remember *anything*, but are asked to understand *one time* what they are being told. After this, they relax and are more often than not attentive. The best follow-up to such a procedure is giving the class something to do relative to what they have been told, and, if possible, giving them something to take home.

Three major difficulties are encountered in planning and executing these programs. In the case of the Saturday classes, there is the problem of knowing how many to plan for. This has been solved only by keeping an attendance record and noticing what kind of activity is most popular. For example, the attendance for movies is usually between 50 and 60, while the attendance for making miniature gardens was 85, The second problem is that of discipline, or, more aptly, a substitute for discipline. This substitute has proved to be some sort of physical activity although this may not always work. Rowdy children are asked to leave the class. Sometimes, however, a group will sit and listen to a lecture on mosses or ferns for an hour and be most attentive. The third problem is finding a large variety of interesting projects in which large numbers of children can participate. It is known that some projects will be popular, but the attractiveness of others has to be tried.

It is not the purpose of these programs to make botanists and horticulturists out of every child who attends the classes, although a few may later pursue the study of plants. In a time when Buck Rogers and Flash Gordon are rapidly becoming nonfiction, science for its own sake is given great emphasis. Much of this is necessary, but care must be taken to insure the preservation of a person's individuality along with his scientific accomplishments. The purposes of the programs described above are to provide diversion to children as well as a scientific approach, with a personal touch, to the study of the Plant Kingdom.

The Pitzman Nature Program will be offered again this summer with the following schedule.

PITZMAN NATURE PROGRAM
SUMMER 1959

First Session: Each Tuesday and Thursday from June 16 through July 16.

Second Session: Each Tuesday and

Thursday from July 21 through August 20.

Classes will be held out-of-doors. In case of rain, films will be shown in the Museum Building.

Children attending classes in both the morning and the afternoon may bring their lunches.

SCHEDULE OF CLASSES

Time	Age Group	
	7–10	11–18
10 a.m.	Birds	Trailfinders
11 a.m.	Trailfinders	Birds
1 p.m.	Plants and Man	Man's Enemies
2 p.m.	Man's Enemies	Plants and Man

Instructors:

(Birds): June 16th to July 16, Mr. Earl Hath, President of the St. Louis Audubon Society, Mrs. Earl Hath, and Jeane Stern, of the St. Louis Audubon Society.

July 21 to August 20, Mr. Stuart O'Byrne, Mrs. Stuart O'Byrne, and Helen Bowman, all of the St. Louis Audubon Society.

(Trailfinders, Man's Enemies, and *Plants and Man):* Mary Beth Andrews, Josephine Davies and Kenneth Peck, all members of the Garden staff.

SATURDAY ACTIVITIES PROGRAM

May 2 Hunting for Hidden Flowers
May 9 Plants from Prehistoric Times
May 16 Color Sound Movies
May 23 The Life Secret of a Plant
May 30 Plants with Wet Feet
June 6 What Is a Tree?
June 13 Exploring the Underworld
June 20 The Queen of Flowers
June 27 Color Sound Movies
July 4 A Morning in the Garden
July 11 Shades of the Night
July 18 Flowers for Breakfast
July 25 Life in the Desert
Aug. 1 Peas in a Pod
Aug. 8 The New Generation
Aug. 15 Color Sound Movies
Aug. 22 Dangerous Plants
Aug. 29 Table-Top Greenhouses
Sept. 5 Gardening through the Ages
Sept. 12 Plants for the House
Sept. 19 The Hundred-in-one Flowers
Sept. 26 Color Sound Movies

Time: 10:00 to 11:30 A. M., every Saturday.

Age Groups: 7 to 10, 11 to 18.

Admission: Free. No registration. One or all programs may be attended.

Instructors: Josephine Davies and Kenneth Peck.

For Information: Phone PR 6-5567.

BOOK REVIEW

Colombian Orchids. By Mariano Ospina Hernandez. Publicaciones Technicas Ltda. Bogotá, D. E., Colombia. 1958. 305 pp., 10 pp. color illustrations. Price $7.25. (Text in both English and Spanish).

One cannot read this book without feeling the tremendous contributions which Colombian orchids have made toward the development of the many beautiful hybrids which are to be found in our modern orchid collections. All of the horticulturally important species in Colombia, as well as most of its little known and seldom cultivated botanical orchids, are de-

scribed and illustrated. While not a complete taxonomic treatment of the orchids of Colombia, this book is, nevertheless, well written in a style that is simple and easy to understand. The last 45 pages are devoted to orchid culture and it is interesting to one living in and growing plants in a temperate climate, to read of the cultural problems encountered by plant growers in a tropical region where altitude and other factors create innumerable climates in one small geographical area.

The line-drawings which accompany the text are excellent, but they would be more useful if they had English sub-titles. On the whole the book should make an excellent addition to any orchid fancier's library.

—ROBERT J. GILLESPIE

PLANTS IN RELATION TO CLIMATE

THERE are at least a dozen factors which all have to be right if you want to grow a plant successfully in your garden. There are problems of soil, of watering, of feeding, of disease and pest control, of shading and of exposure, but one usually overlooked is the problem of climate. Each plant has its own special needs for temperature; some, such as peas and sweetpeas, and nasturtiums, will only grow under cool conditions. Others, such as corn and soybeans, grow best when the temperatures are high. Again, others need a period of cold weather between summers. Most deciduous trees behave that way: a peach or pear tree, for instance, will not leaf out in spring unless it has gone through a cold period during winter. These plants even won't flower unless they are subjected to a cold winter a year and a half beforehand.

It is interesting that for many plants the temperature during night is critical. When, for instance, we try to grow tomatoes they will produce fruits only when the night temperatures are between 60° and 68°. This means that in spring and in autumn the night temperatures are too low for tomatoes to set fruit. In hot summers, on the other hand, the night temperatures may be too high and again the tomato plants do not set fruit. In any climate where the night temperatures are regularly between 60° and 68° tomato production is good, no matter whether the days are cool or hot. These facts explain why in many years we have difficulties in tomato production in our gardens around St. Louis.

Potatoes are able to grow over a wide range of temperatures, but tubers are formed only when the nights are between 50° and 60°; therefore, we cannot grow successfully tomatoes and potatoes at the same time. For potato production, a climate with real cool summers is ideal, such as Maine or Idaho.

To investigate the likes and dislikes of plants we must have greenhouses in which we can control the temperatures. It is hoped that in the future we will have a set of such greenhouses at the Missouri Botanical Garden so that we will be able to find out the climatic preferences of many of our garden plants. —F. W. WENT

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SOME FACTS ABOUT SHAW'S GARDEN

The Missouri Botanical Garden (the official name chosen by Mr. Shaw) carries on the garden established by Henry Shaw over a century ago at TOWER GROVE, his country home. It is a private institution and has no support from city or state. The old stone walls and cast-iron fences, the Linnaean House, the Museum, the Mausoleum, and the TOWER GROVE mansion all date from Mr. Shaw's time. Since his death, as directed in his will, the Garden has been in the hands of a Board of Trustees who appoint the Director.

The Garden is open every day in the year (except New Year's and Christmas) from nine A. M. until seven P. M. spring to fall and until six in the winter time though the greenhouses close at five. TOWER GROVE, itself, Mr. Shaw's old country home, is open from one until four, admission twenty-five cents, with special guides. The Garden is nearly a mile long and has several entrances. The Main Entrance, the one most used by the general public, is at Tower Grove and Flora Place on the Sarah bus line (No. 42). The Park Southhampton buses (No. 80), direct from downtown, pass within three blocks of this entrance and stop directly across the street from the Administration Building at 2315 Tower Grove Avenue. The latter is the best entrance for students, visiting scientists, etc. It is open to such visitors after 8:30 A. M., but is closed on Saturdays, Sundays, and holidays. The Cleveland Ave. gate, 2121 Tower Grove, is nearly always open, and there is a service entrance on Alfred Avenue, one block south of Shaw Avenue.

Since Mr. Shaw's time an Arboretum has been developed at Gray Summit, Mo., adjacent to State Highways 50 and 66. It is open every day in the year and has auto roads as well as foot trails through the wild-flower reservation. There is a pinetum and an extensive display of daffodils and other narcissi which are at their best in April.